



Renewable Power Outlook 2003

The Role of Voluntary Markets

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<http://www.renewablepower.platts.com>

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Discussion Agenda

- **Renewable Power Outlook 2003**

- **Renewable Power Market Drivers**

- **National Forecast**

- **Voluntary Market Outlook**

- **Conclusions**



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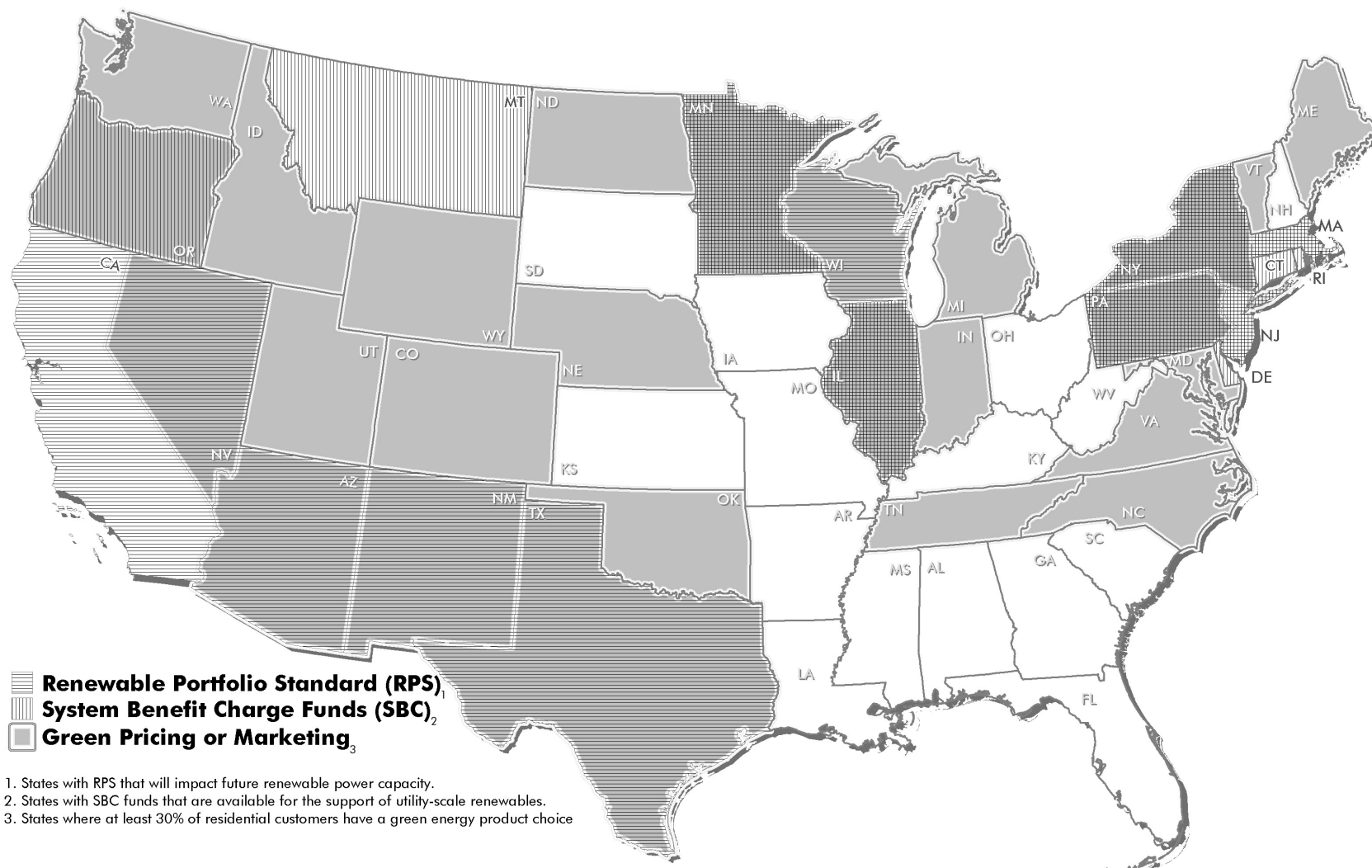
Renewable Power Outlook 2003

Background

- ➔ **First annual state-by-state, technology-by-technology forecast of non-hydro renewable power capacity and generation from 2003 through 2015, available to members of our *Renewable Power Service*.**
- ➔ **The 2003 version of the PR&C *Renewable Power Outlook* relies on a modeling approach that independently forecasts supply and demand.**
- ➔ **Using a bottoms-up approach, we analyzed demand drivers such as renewable portfolio standards, system benefit charges, and customer choice programs on a state-by-state basis**
- ➔ **On the supply side, we analyze the existing base of renewable capacity, append planned capacity additions from the Platts NEWGen database, and conduct technology-by-technology resource assessments to produce a renewable power supply curve for each state.**

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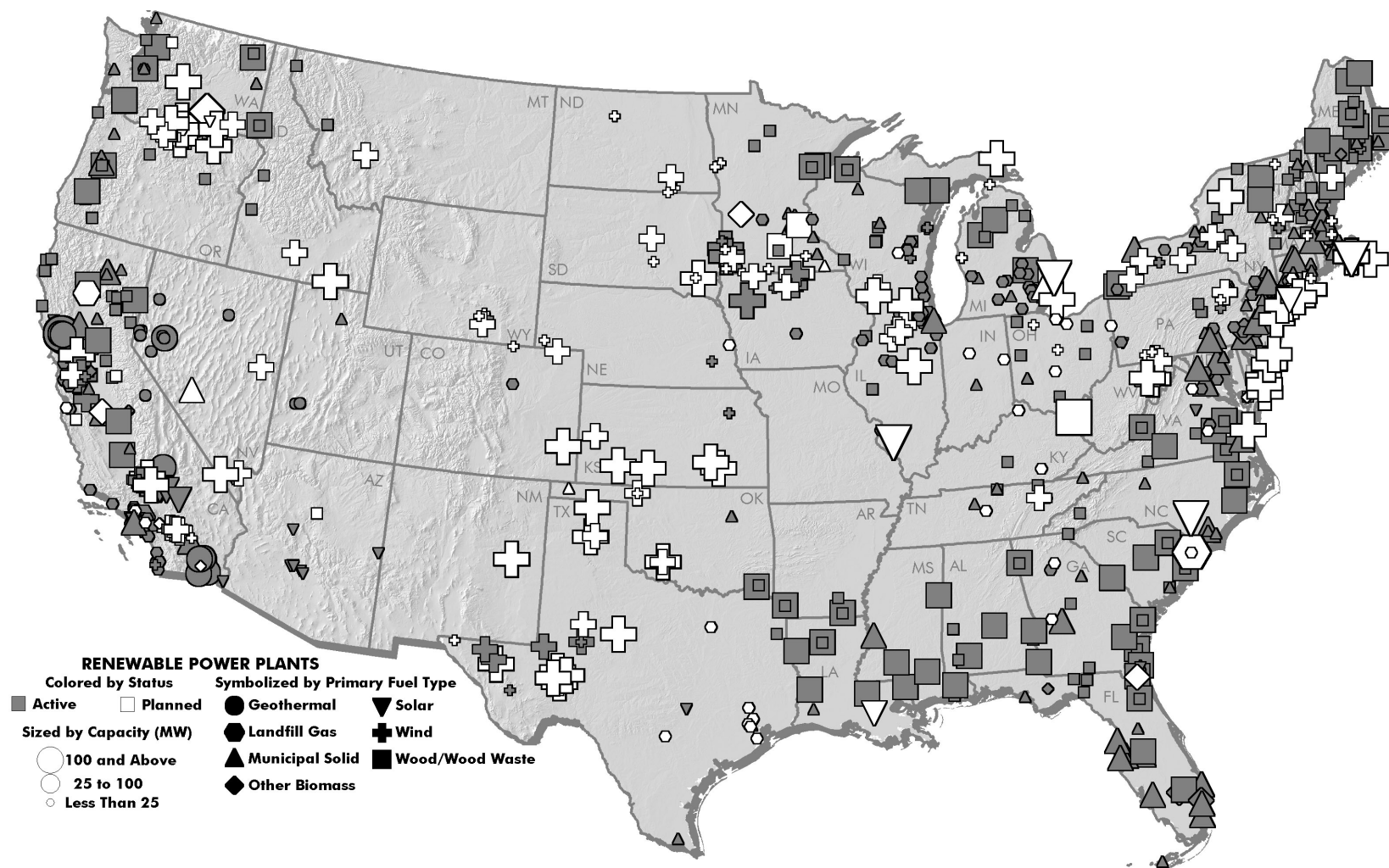
State Policies



Source: Platts Research & Consulting, Platts PowerMAP.

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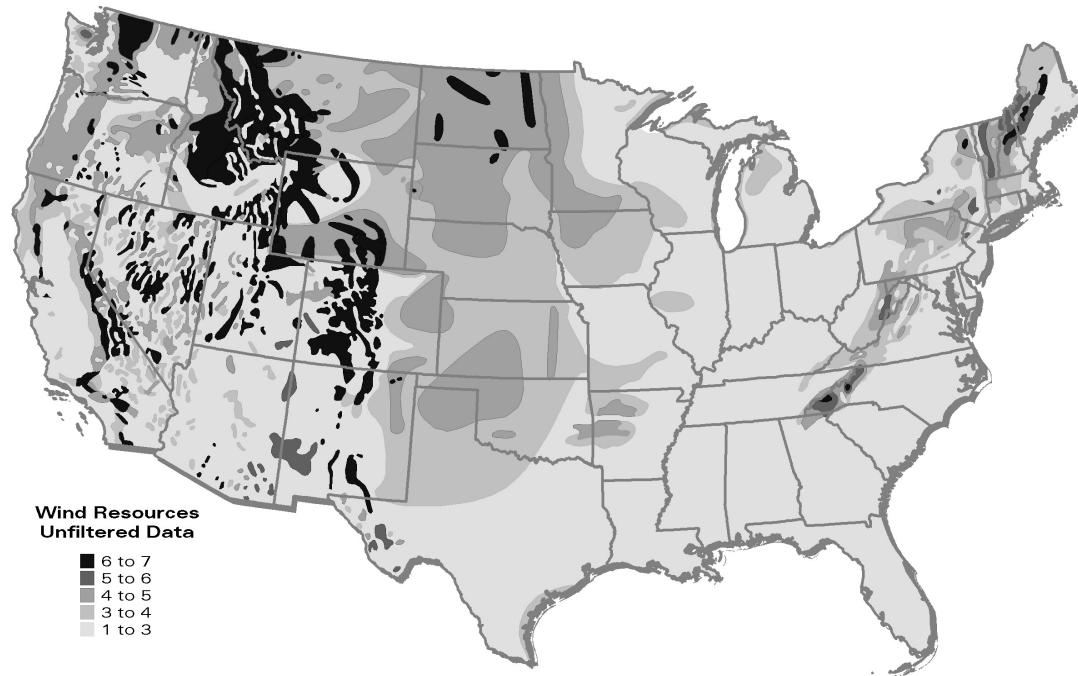
Planned and Existing Capacity



Source: Platts Research & Consulting, Platts NewGen.

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Resource Assessment

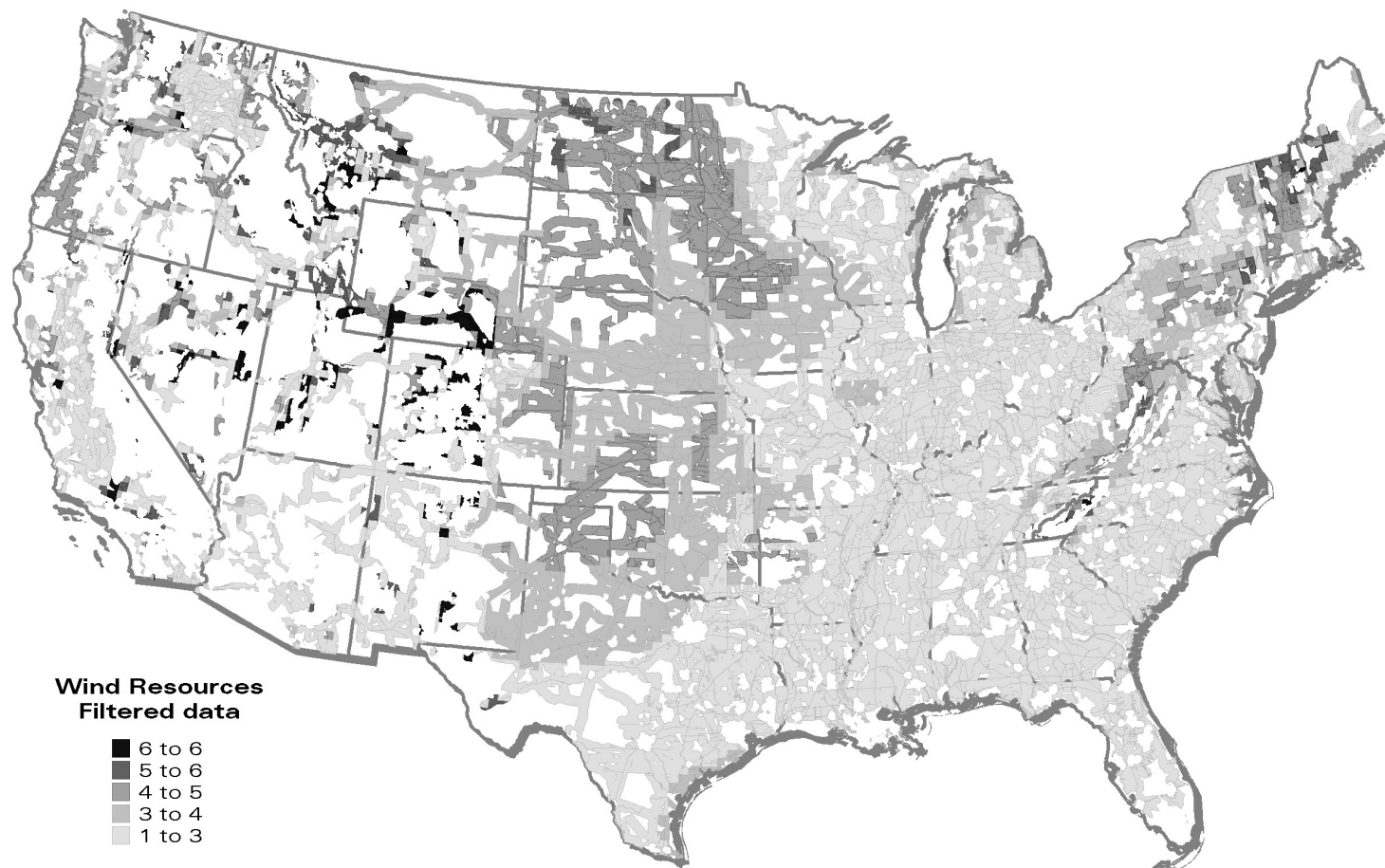


1. Started with national 50 meter annual average wind speed data.
2. Eliminated sites without road access within 10 miles.
3. Identified sites with major transmission within 10 miles and those without transmission access.
4. Excluded sites with land use limitations.
5. Eliminated sights with greater than 14% land slope.
6. Considered transmission constraints on a state-by-state basis.
7. Estimated total remaining favorable resources by adding square miles by wind class and estimating the expected MW per square mile.

Source: Platts Research & Consulting, Platts PowerMAP.

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Resource Assessment



Source: Platts Research & Consulting, Platts PowerMAP.



Renewable Power Market Drivers

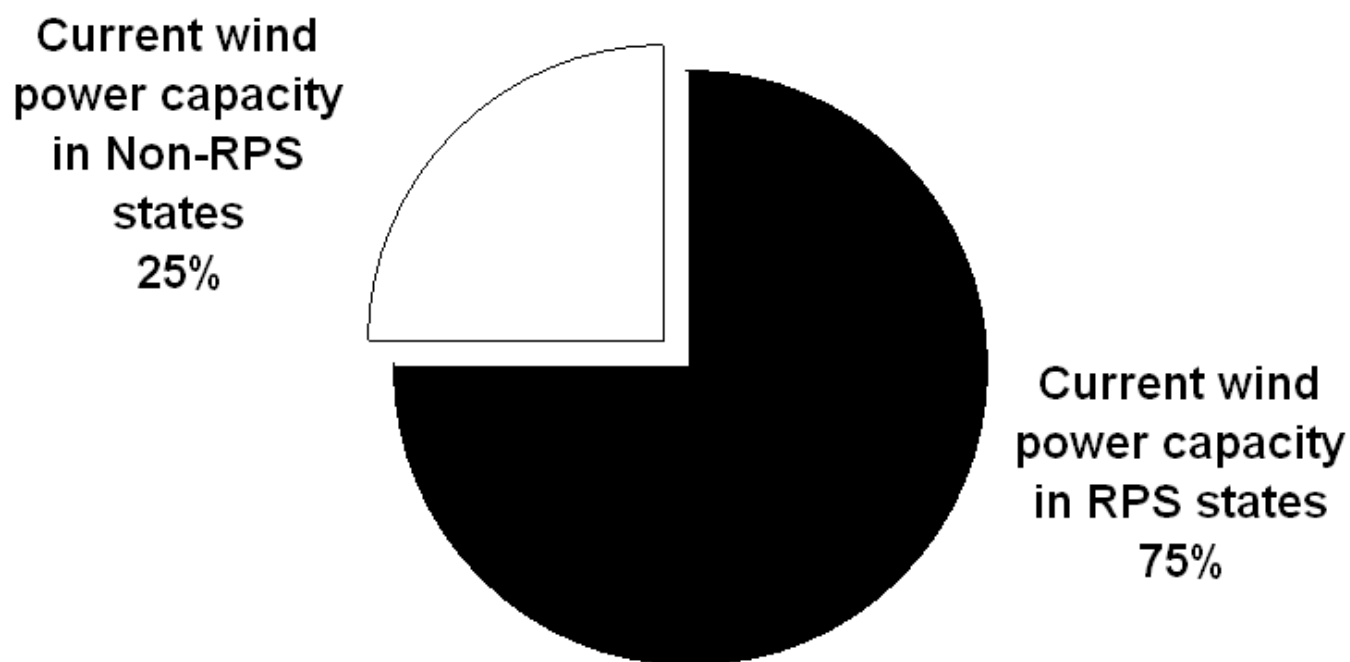
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Market Drivers

- ➔ **Renewable Portfolio Standards:** 16 states have enacted renewable portfolio standards, which require load serving entities to provide a specific fraction of renewable energy to customers.
- ➔ **Systems Benefits Charges:** 11 states have programs that set-aside dollars exclusively for the development of renewable power systems. These programs were generally enacted in the context of state-level restructuring. These programs often overlap with RPS mandates such as in California.
- ➔ **Customer Choice:** Through Green pricing and green marketing programs at least 30 percent of customers in 27 states current have the opportunity to pay a premium for the receipt of renewable power.
- ➔ **Economic Considerations:** In some instances, renewable power sources are cost competitive with conventional generation options and provide developers with both a profit opportunity and a hedge against political and natural gas price risk.
- ➔ **Tax Policy:** The Production Tax Credit (wind and closed-loop biomass), Investment Tax Credit (solar and geothermal), accelerated depreciation (all renewables), and the geothermal depletion allowance improve the economic profile of renewables.

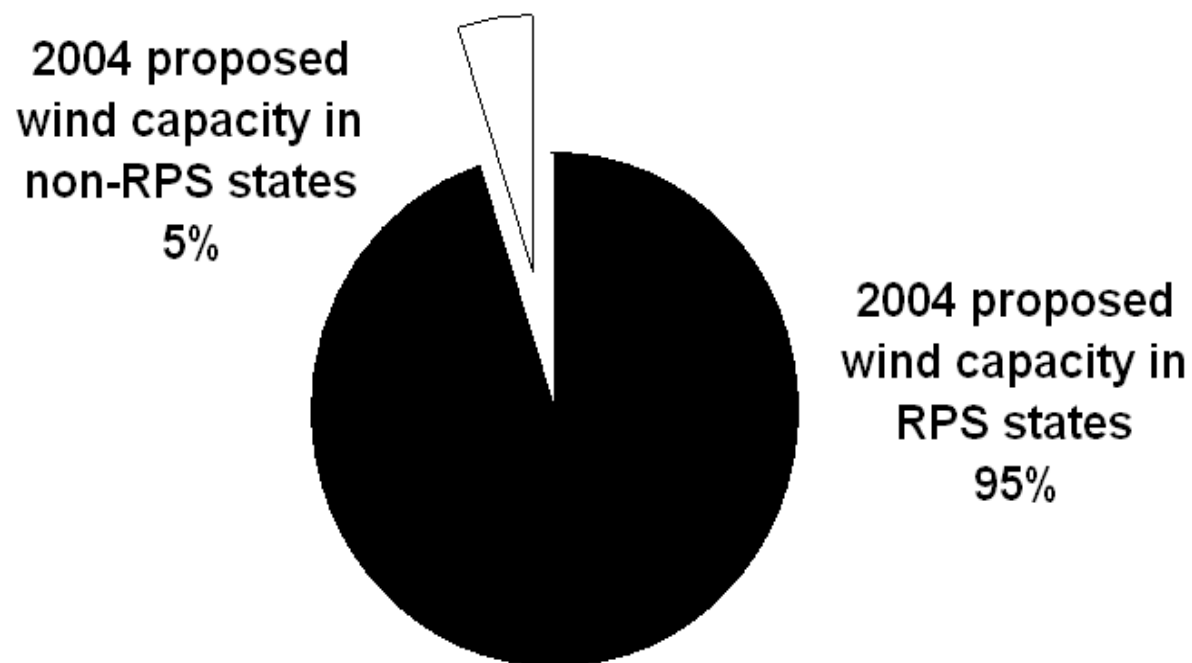
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The Importance of RPSs



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The Importance of RPSs

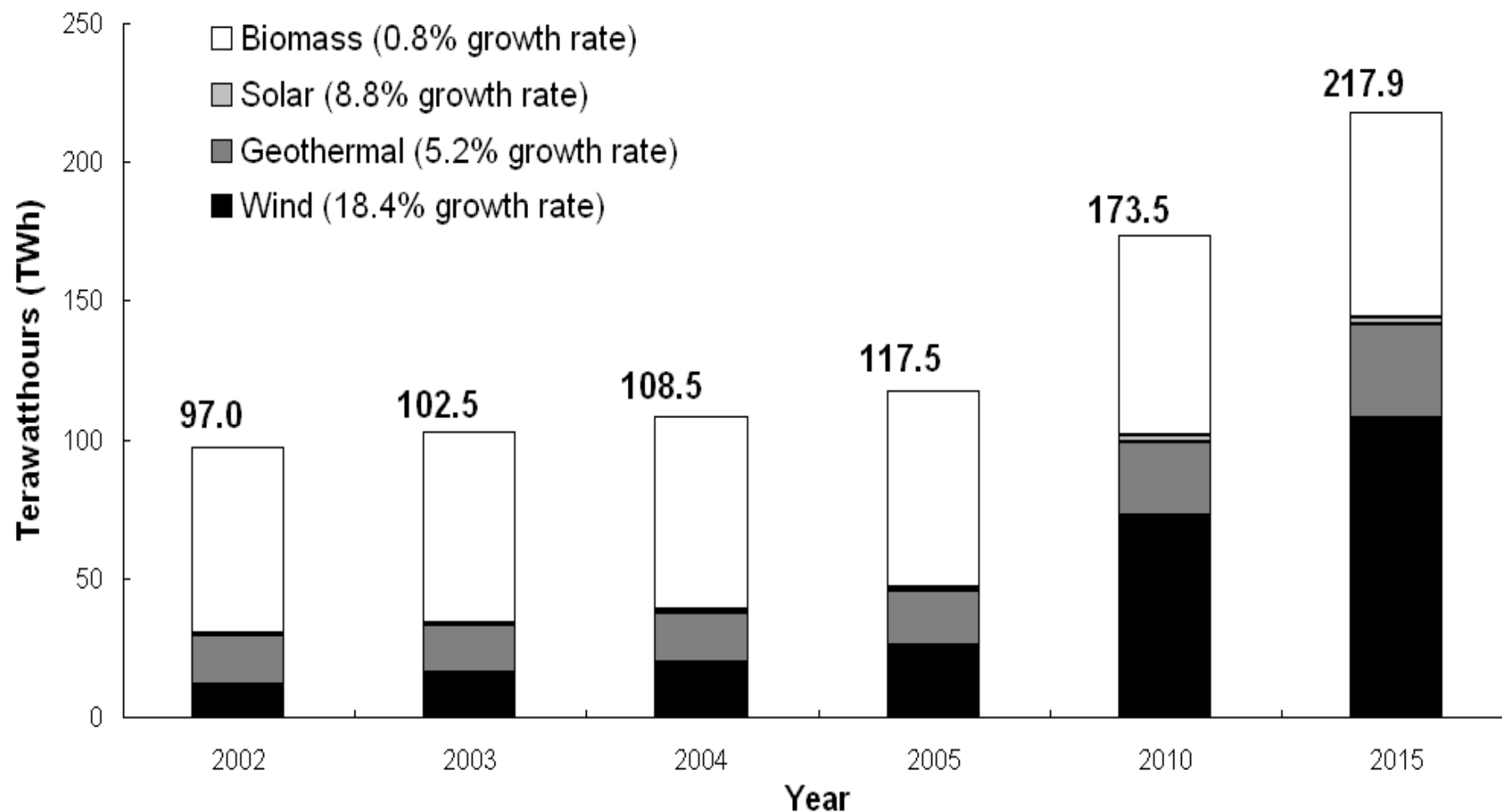




National Forecast

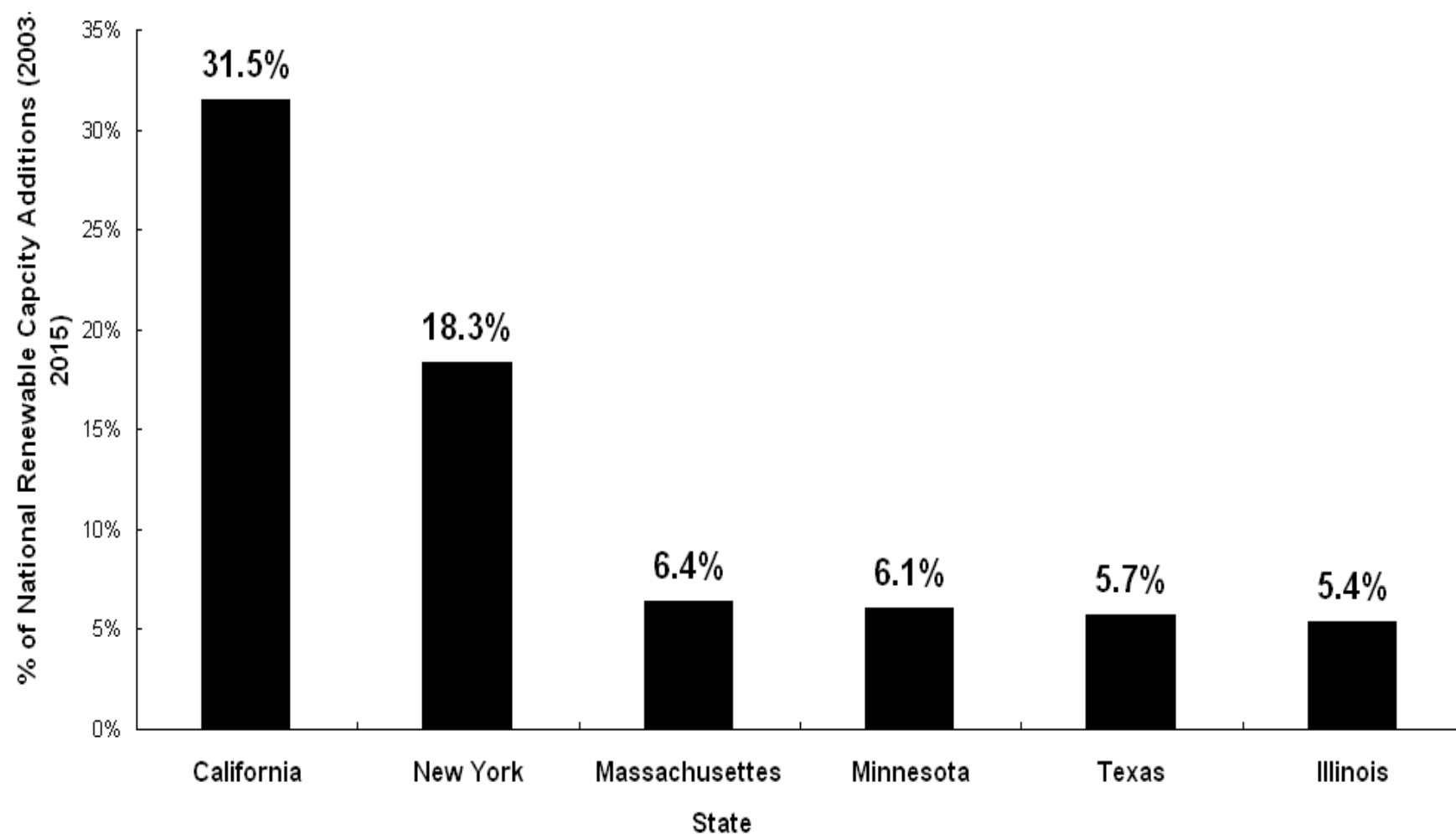


National Forecast Generation



National Forecast

Key States

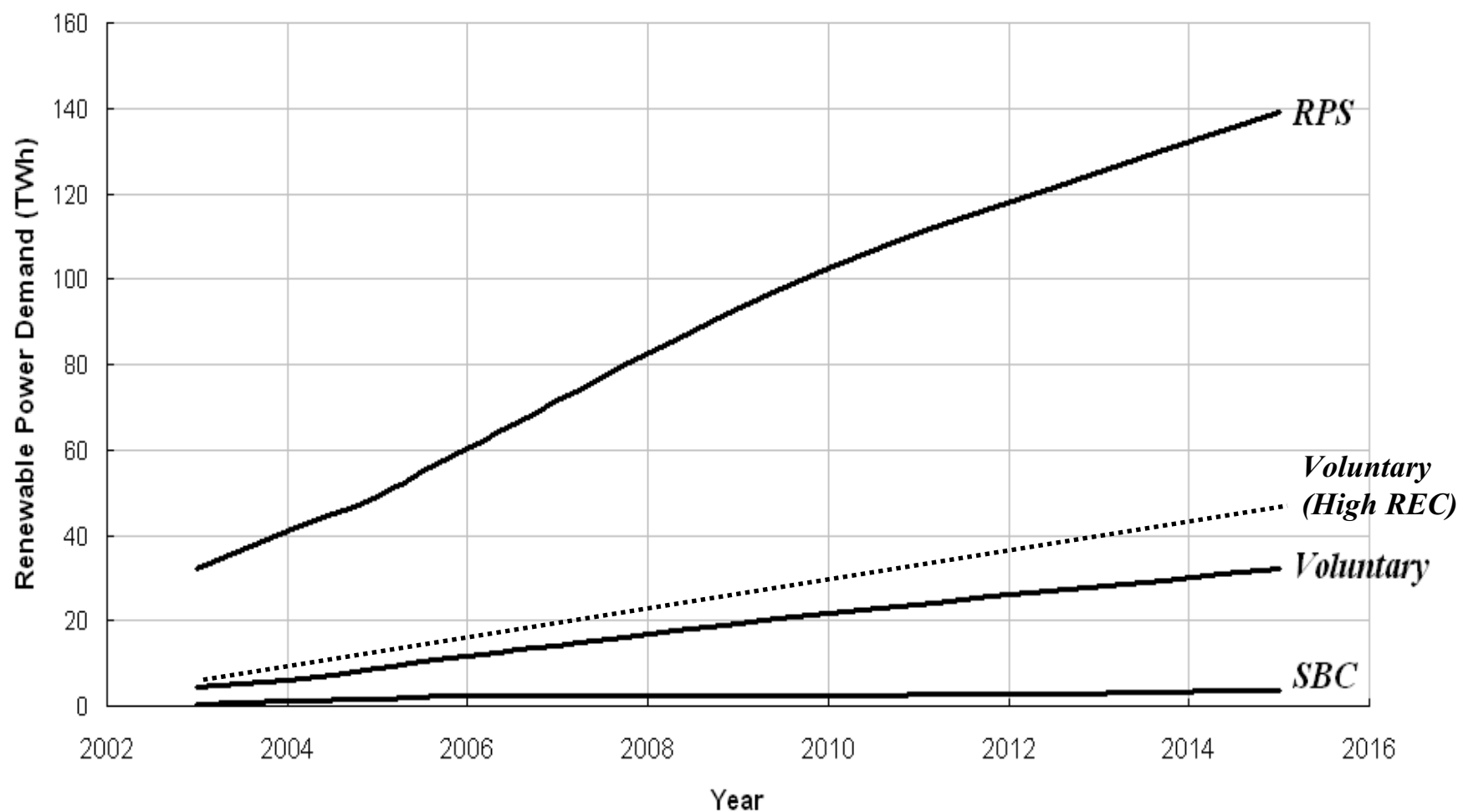




Voluntary Market Outlook

Voluntary Market Outlook

Importance of Demand Drivers



Conclusions

Conclusions

The Role of Voluntary Markets

- ➔ **RPSs, SBC funds, customer choice, economic motivations, and tax policy considerations** are the primary drivers behind renewable power market growth. It is our view that RPSs are the most important driver, accounting for 95% of proposed wind additions in 2004.
- ➔ We believe that renewable power capacity will grow from 17.7 to 60.1 GW, and renewable power generation will grow from 97 to 217.9 TWh between 2003 and 2015. This indicates that **renewable power generation as a percentage of national generation will increase from 2.6 to 4.6.**
- ➔ **Voluntary markets play an important role in renewable power demand growth, accounting for 18 percent of incremental demand moving forward.** The growth of the voluntary market segment may accelerate depending upon the evolution of renewable energy credit (REC) markets.
- ➔ **The underlying fundamentals of voluntary markets appear solid and positioned for growth.** We expect both the percentage of customers with a green option customer participation rates to increase substantially between 2003 and 2015.

Conclusions Questions?

Thank You!

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